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(71) Applicant(s)

Link Treasure Limited
(Incorporated in the British Virgin Islands)
The Creque Building, Upper Main Street,
Road Town, Tortola, British Virgin Islands

(72) Inventor(s)

Chuan-Tso Tai
Feng-Chi Chang

(74) Agent and/or Address for Service

Edward Evans Barker
Clifford's Inn, Fetter Lane, LONDON,
EC4A 1BZ, United Kingdom

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(56) Documents Cited

DE 003304443 A	US 6174028 B
US 5868459 A	US 4807926 A
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(54) Abstract Title

Adjustable and foldable infant's rocker

(57) An infant's rocker has an arcuate rocking frame 10 and front 20 and rear 30 support frames pivotally mounted at 51,52 to the ends of the rocking frame. A sleeve 40 slides on the front frame and is pivotally connected to the other end of the rear frame whereby the angular position of the front frame can be adjusted or the whole structure folded flat (Fig 4C). Adjustment of the sleeve involves a spring loaded lock (80 Fig 3) moved to engage the floor to prevent rocking.

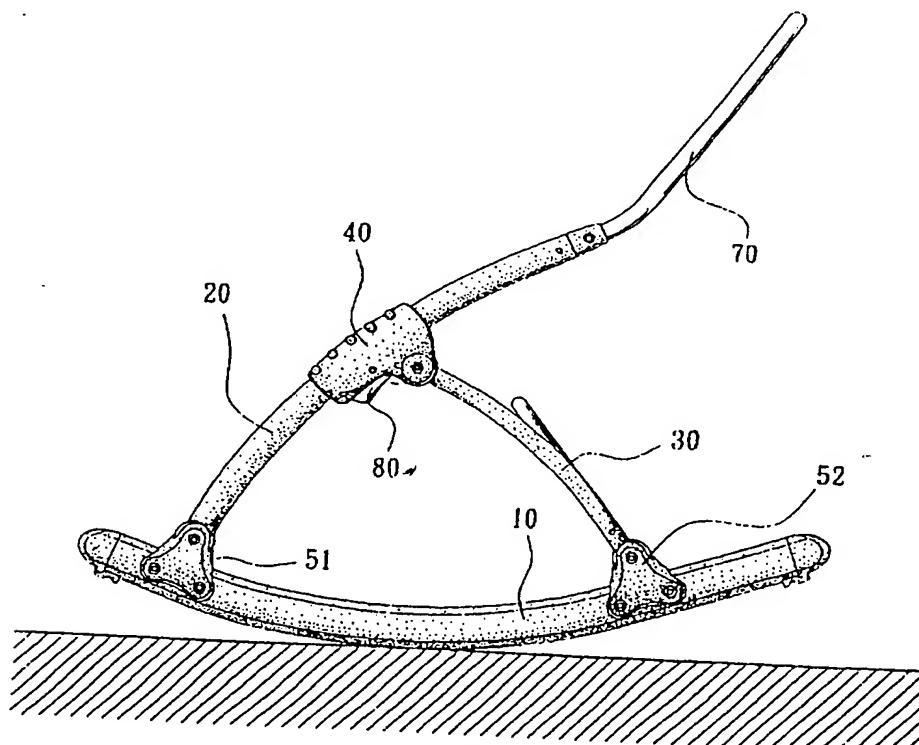
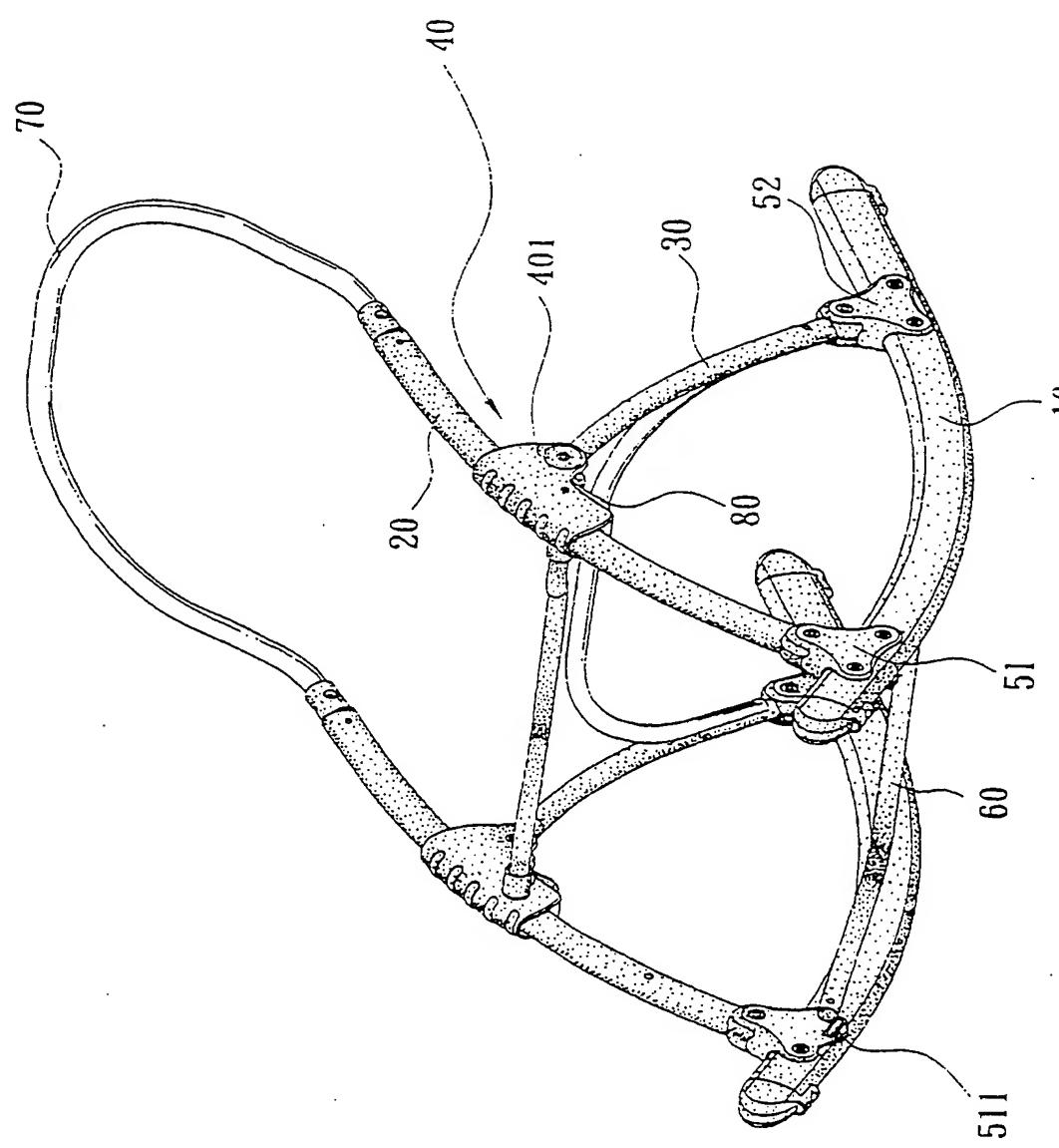


FIG. 4A

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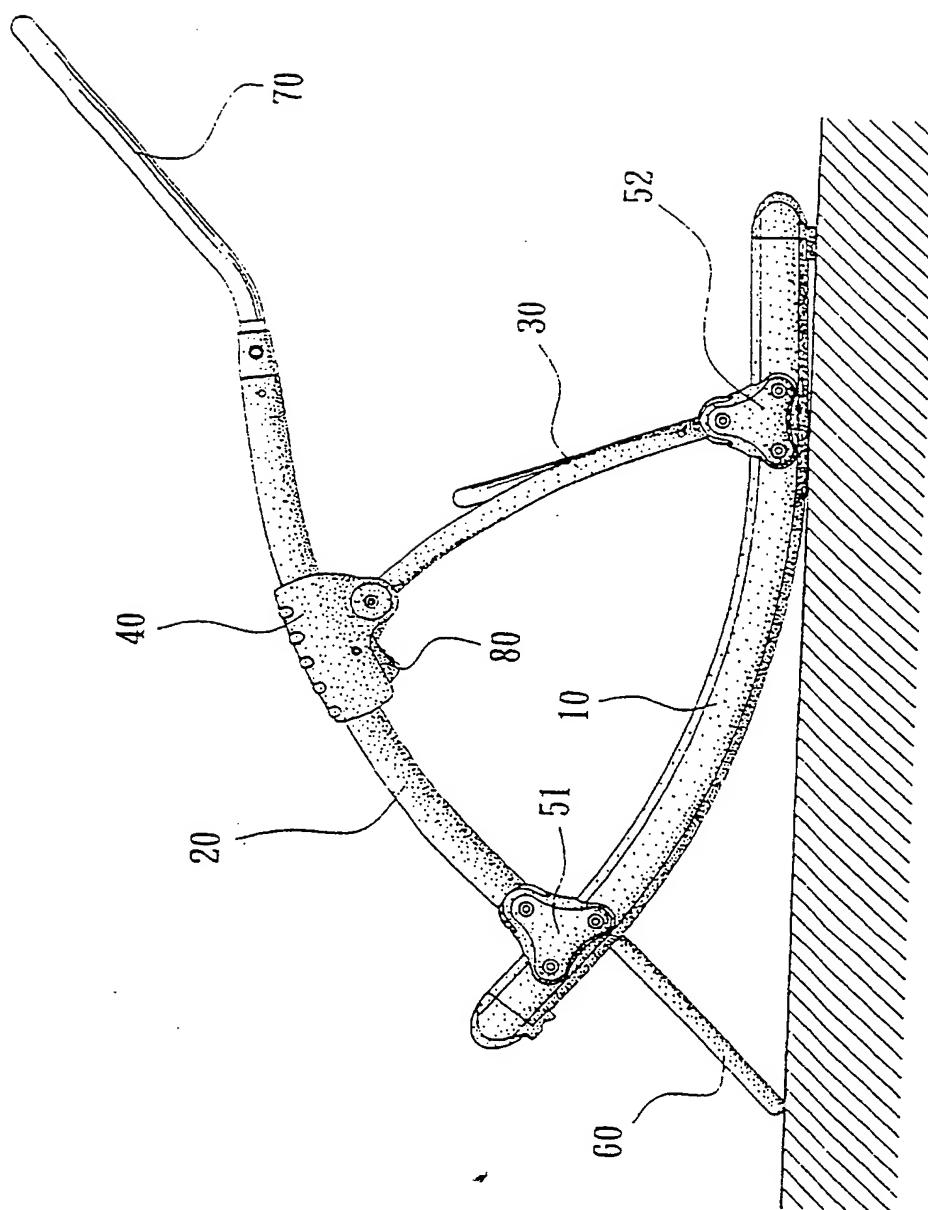
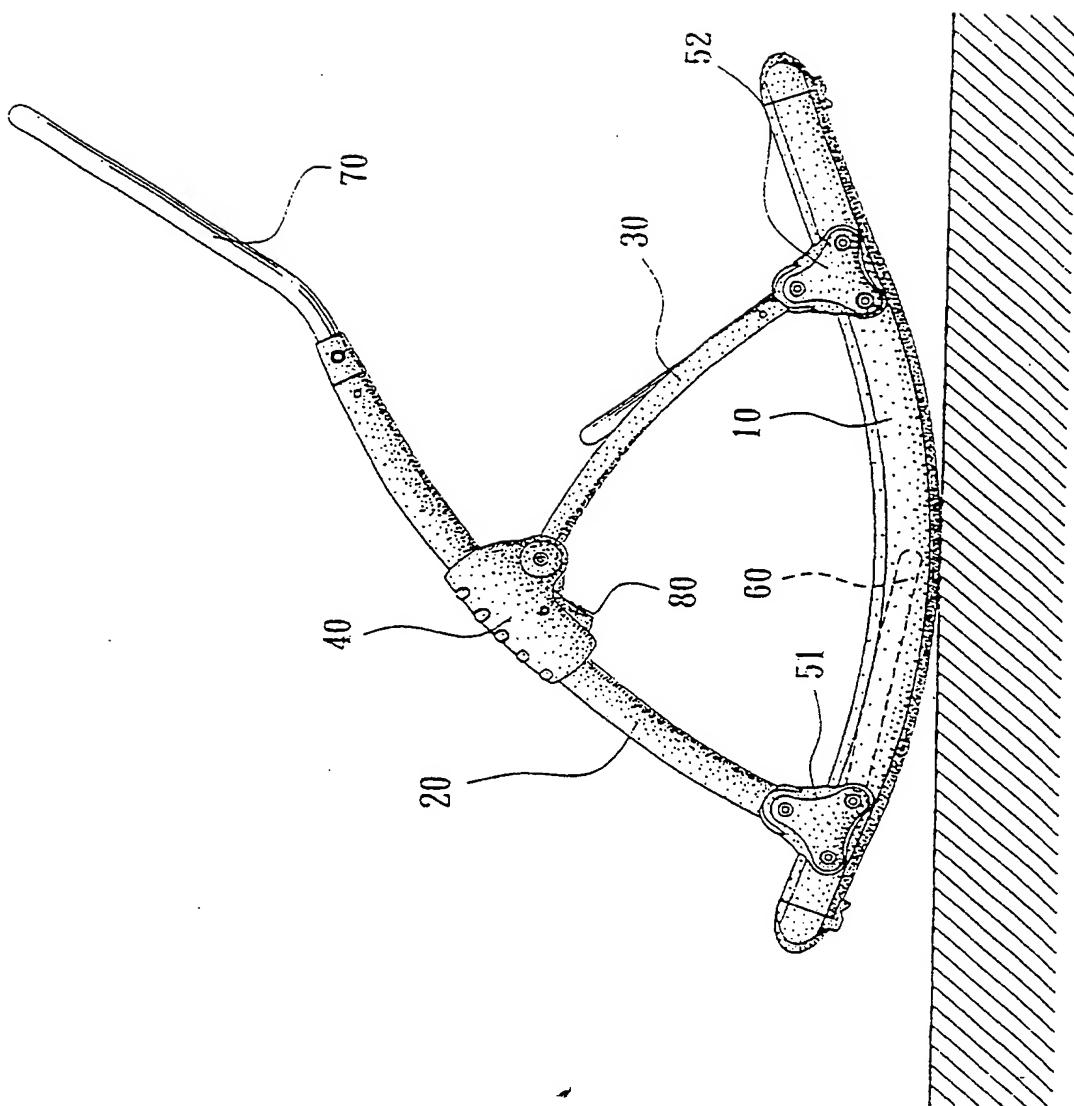


FIG. 2A

FIG. 2B



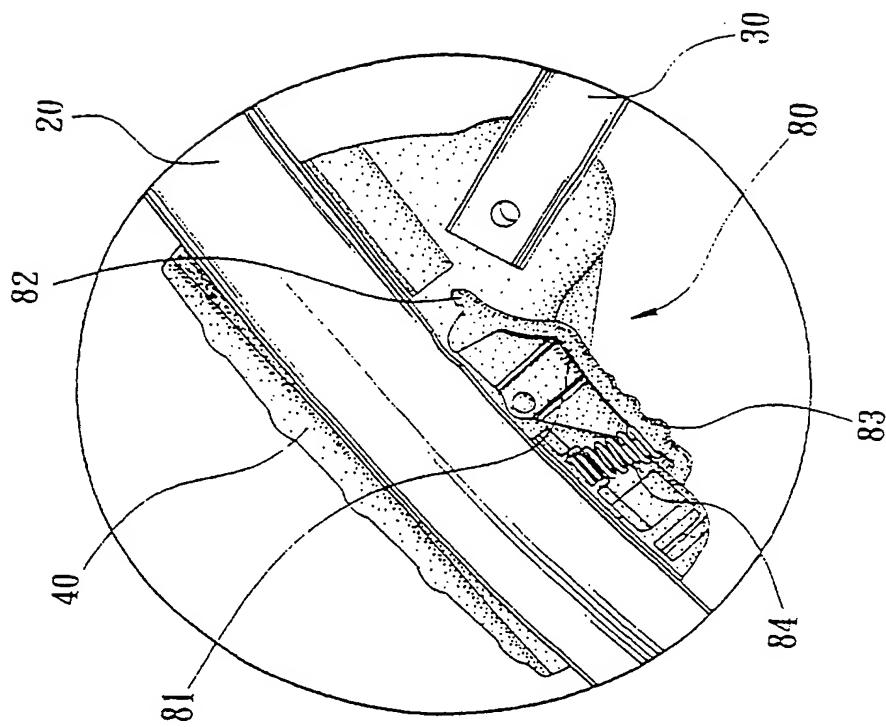


FIG. 3B

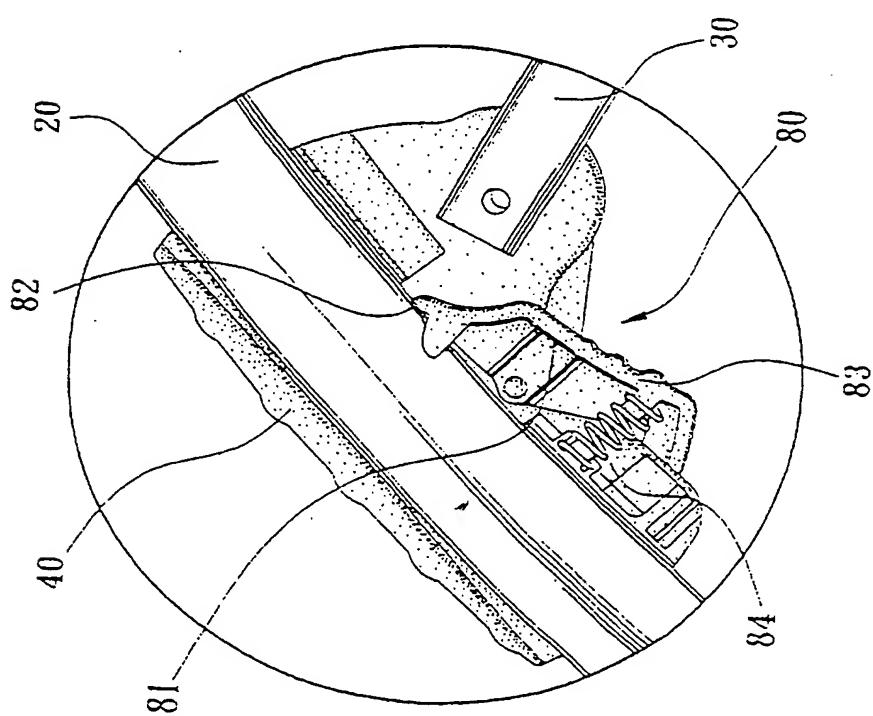
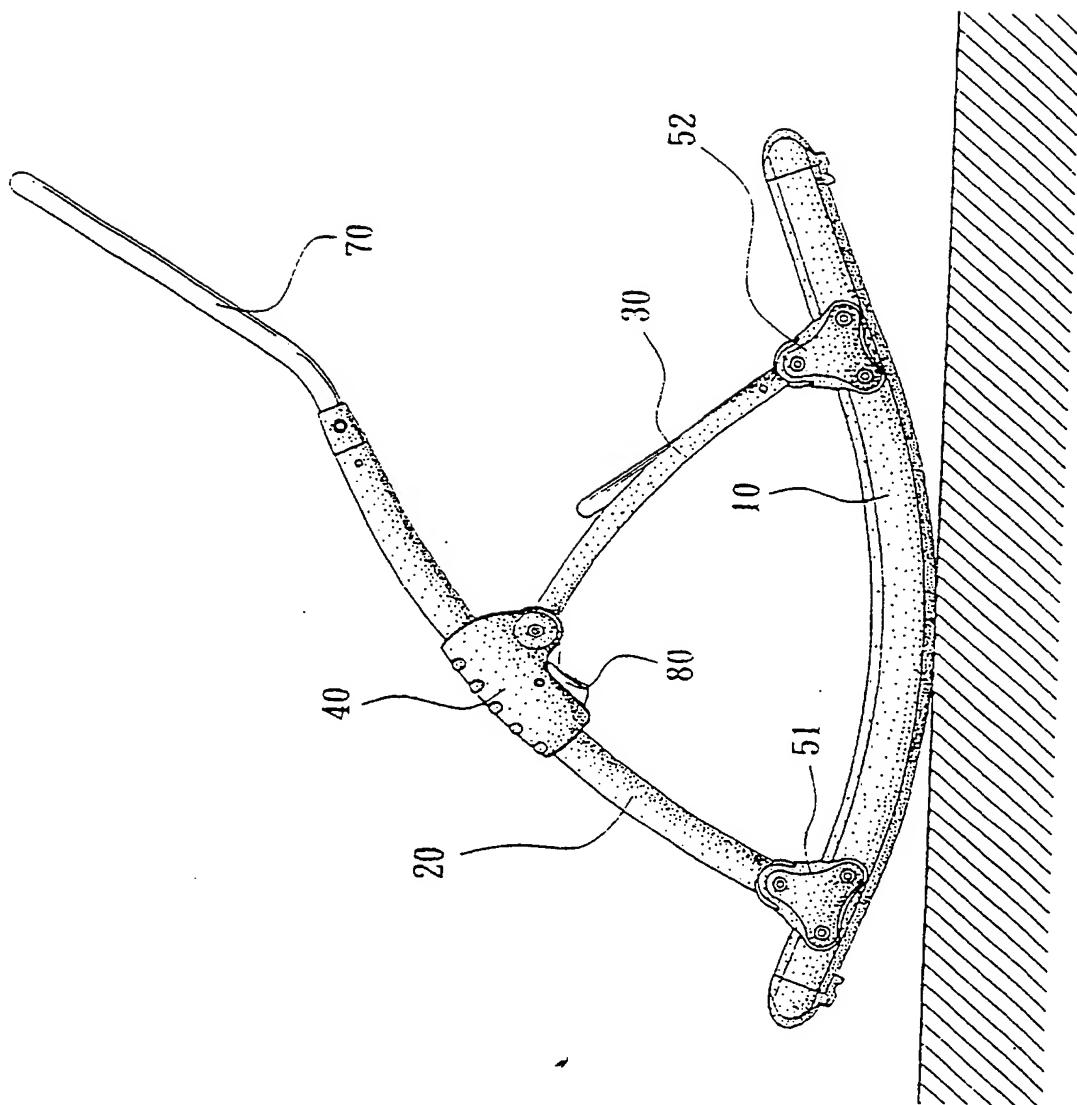


FIG. 3A

FIG. 4A



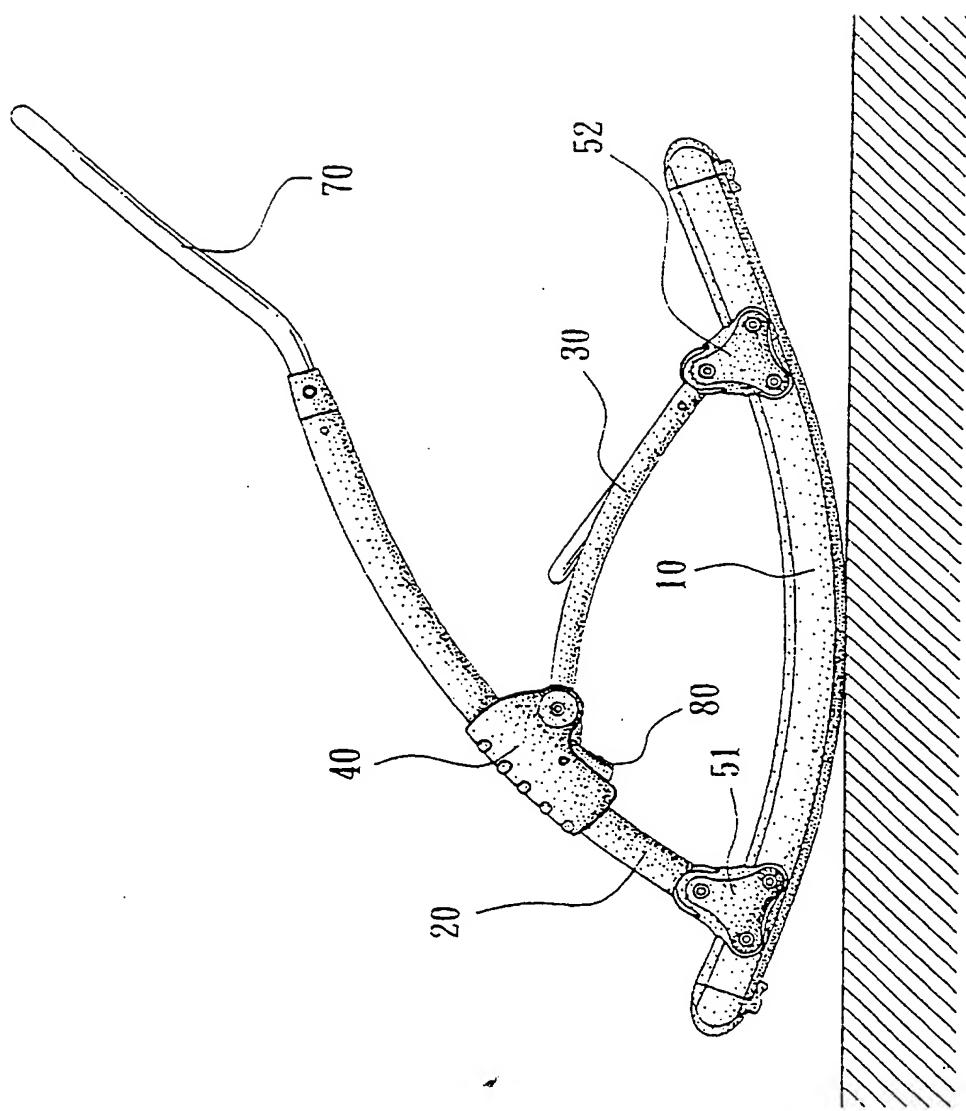


FIG. 4B

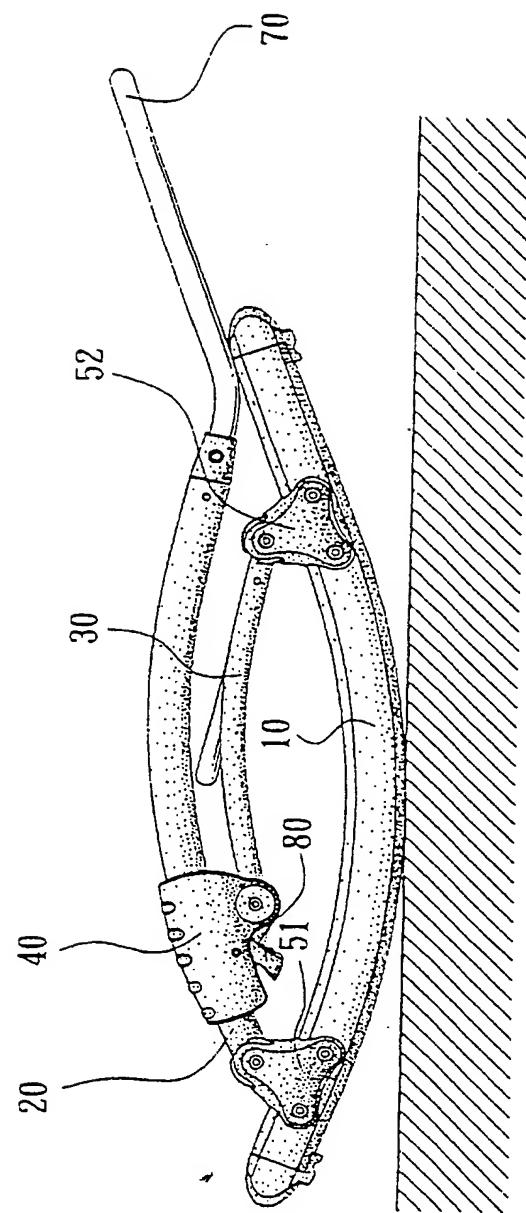


FIG. 4C

A Structure for an Infant's Rocker

Field of the Invention

The invention relates to a structure for an infant's rocker, allowing an infant to ride, sit, or lie reclined on the rocker, and to be rocked back and forth. The invention is aimed at infant's rockers that rock back and forth on the floor, and more particularly, to a structure for an infant's rocker that can vary the angle of inclination at which the infant lies, and can be folded up for storage.

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Background of the Invention

The disclosed infant's rocker is designed to provide an infant with the ability to ride, sit, or lie reclined on a rocker, and to be rocked back and forth. At the same time, the invention achieves the objective of enabling a carrying apparatus or a recliner to have various implementation configurations. For example, U.S. patent no.6,251,023 discloses a structure for a hanging infant's rocker, which is a type of rocker whose structure is mostly comprised of a support frame, swinging arms, and a seat, where the support frame stands on the floor, the two swinging arms are connected by hinges to the support frame, and the seat is installed on the two swinging arms, so that the seat can swing back and forth in an arced motion through the two swinging arms. This kind of structure for a hanging type of infant's rocker is usually quite bulky, and takes up a lot of space.

Also, U.S. patent no.5,503,458 discloses an elastic structure for an infant's rocker that comprises a chassis and an elastic frame. The elastic frame is connected to an end of the chassis forming an included angle. The chassis sits on the floor, and the elastic frame can be set in motion in a vertical direction to a small extent due to the included angle between the elastic frame and the chassis. Thus, the elastic frame may bounce upward and downward.

In addition, there is an arc-shaped structure for an infant's rocker, which has the simplest structure. It comprises an arc-shaped chassis on which an infant's holder is found, and a back and forth rocking motion is achieved through the arc shape of the chassis that is always in contact with the floor. The infant's holder installed on this type of arc-shaped infant's rocker may be composed of a plurality of tubes, most of which cannot be folded up, and cannot

change the angle of inclination for the infant lying in it when needed, thus constituting an insufficiency in design for the users.

5 Object and Summary of the Invention

The primary objective of the invention is to provide a structure for an infant's rocker (hereinafter referred to as "the structure") that can change the angle of inclination for the infant lying in it.

10 The structure disclosed by the invention comprises an arc-shaped rocking frame, a frontal support frame, a sliding sleeve and a rear support frame. The arc-shaped rocking frame sits on the floor, and it rocks back and forth because of its arc-shaped outline. The frontal support frame and the rear support frame are connected through hinges to the two ends of the arc-shaped rocking frame respectively. The sliding sleeve is connected to the frontal support
15 frame, though it may be slid along the frontal support frame. The other end of the rear support frame is connected through hinges to the sliding sleeve. The relative positions of the frontal support frame and the rear support frame can be varied by changing the position of the sliding sleeve on the frontal support frame. As a result, an infant may ride, sit, or lie reclined on the rocker with different angles of inclination when adjustments are made to the angle of
20 the frontal support frame. Or, the frontal support frame and the rear support frame can be adjusted to be closer to each other, so that the structure takes up less space, which is beneficial for storage. There is also a lock on the sliding sleeve, which enables the position of the sliding sleeve to be changed freely from the frontal support frame, or fixed at its adjusted position.

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To make the aforesaid or any other objective, characteristic and merit of the invention more clear and easier to understand, a preferred embodiment, with drawings attached, is given below to illustrate the invention in detail.

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Detailed Description of the Preferred Embodiment

The structure for an infant's rocker disclosed by the invention relates to an arc-shaped rocking frame that allows the rocker to be rocked.

As shown in Figures 1 & 2A, the structure for an infant's rocker disclosed by the invention 5 mainly comprises an arc-shaped rocking frame 10, a frontal support frame 20, a rear support frame 30 and a sliding sleeve 40.

The arc-shaped rocking frame 10 is a tube with its two ends bending upward. The arc-shaped rocking frame 10 sits on the floor with its central portion in touch with the floor and its two 10 ends bending upward. There is a frontal hinged connection region 51 and a rear hinged connection region 52 at the two ends of the arc-shaped rocking frame 10 respectively. On the inner side of the frontal hinged connection region 51 is a stoppage peg 511. A stoppage rod 60 is connected by hinges to the arc-shaped rocking frame 10 near the stoppage peg 511. Although the stoppage rod 60 is connected to the arc-shaped rocking frame 10, it can be 15 moved along the arc-shaped rocking frame 10, and has at least one storage position close to the arc-shaped rocking frame 10, as well as at least one stoppage position extending away from the arc-shaped rocking frame 10. When the stoppage rod 60 is in storage position, (it may be fixed by a fastener, not shown in the figures) the arc-shaped rocking frame 10 may be rocked freely. When the stoppage rod 60 is in stoppage position, it is pointing right at the 20 stoppage peg 511, so that it is fixed at the stoppage position and it sticks out against the floor and thus prevents the arc-shaped rocking frame 10 from rocking.

The frontal support frame 20 is a tube, with one of its end connected by hinges to the frontal hinged connection region 51, while its other end is equipped with an armrest 70. The frontal 25 support frame 20 may swing with the hinged connection region 51 as the axis of the swinging movement. There is a plurality of positioning regions 201 aligned on the frontal support frame 20. The positioning regions 201 are the holes found on the wall of the tube of the frontal support frame 10. The frontal support frame 10 may be covered with a piece of knitted cloth (not shown in the figures). The piece of knitted cloth forms the seat for an infant 30 or an infant to lie, ride or sit on.

The sliding sleeve 40 may be slid along the frontal support frame 20. There is a hinged connection region 401 on the sliding sleeve 40. There is a lock 80 on the positioning region

201, which corresponds to the frontal support frame 20 of the sliding sleeve 40. As shown in figures 3A & 3B, the lock 80 comprises a controller 81. The central part of the controller 81 is connected by hinges to the sliding sleeve 40, so that the controller 81 may swing sideways with the connection portion as the axis of the swinging movement. On one end of the 5 controller 81 is a fastening lock 82. On the other end is the press region 83. Underneath the press region 83 is an elastic element 84. Normally, with the elastic element 84, the fastening lock 82 is inserted into a positioning region 201 of the frontal support frame 20. As a result, the lock 80 is in a locking position and thus the sliding sleeve 40 is fixed on the frontal support frame 20. If the press region 83 is pressed, the fastening lock 82 is detached from 10 the positioning region 201 so that the lock 80 is in a released position and the sliding sleeve 40 can slide freely along the frontal support frame 20.

The rear support frame 30 is a tube. One of its ends is connected by hinges to the rear hinged connection region 52, while the other end is connected by hinges to a hinge connection region 15 401 on the sliding sleeve 40. While the sliding sleeve 40 is sliding along the frontal support frame 20, it causes the rear support frame 30 to move, so that the relative positions of the frontal support frame 20 and the rear support frame 30 will vary.

As shown in Figure 4A, according to the structure for an infant's rocker disclosed by the 20 invention, the sliding sleeve 40 is fixed in a positioning region 201 of the frontal support frame 20 through the lock 80. The frontal support frame 20 and the rear support frame 30 support each other. An infant may lie on a piece of knitted cloth that covers the frontal support frame 20 (not shown in the figure), and rock by means of the arc-shaped rocking frame 10. Sometimes the angle of inclination of an infant who is riding or sitting in the 25 rocker determines how comfortable the ride or the seat is. The invention is designed to adjust this angle of inclination. As shown in figure 4B, in the event that a change is to be made in the angle of inclination of the frontal support frame 20, pressing the press region 83 of the lock 80 to move the fastening lock 82 to the released position slides the sliding sleeve 40 onto the next positioning region 201. Then, release the press region 83 so as to make the fastening 30 lock 82 go back to the locking position of the positioning region 201. As a result, the relative positions of the rear support frame 30 and the frontal support frame 20 are varied, making an adjustment in the angle of inclination of the frontal support frame 20, so that an infant can lie on the holder of the rocker with different angles of inclination. The plurality of positioning

regions 201 found on the frontal support frame 20 allow for a number of inclination angles of the frontal support frame 20 by means of the aforesaid adjustment. As shown in Figure 4C, in the event that a user is not using the structure, the user may move the sliding sleeve 40 to the lowest positioning region 201 to bring the frontal support frame 20 and the rear support frame 5 30 together, so that the structure takes up less space and thus is easier to store.

As shown in Figures 2A & 2B, the infant's rocker disclosed by the invention may be prevented from rocking by sticking out a stoppage rod 60 against the floor. Therefore, by varying the angle of inclination of the frontal support frame 20, a seat with different angles of 10 inclination is available for use – a variation in the use of the invention .

Effect of the Invention

As disclosed by the invention, a structure for an infant's rocker is not only designed for an 15 infant to lie, ride or sit on, but it also enable alteration of the angle of inclination of the frontal support frame, allowing the infant to ride or sit on the rocker in different ways. In addition, the frontal support frame and the rear support frame of the structure may be brought together, so that the structure takes up less space and thus is easier to store.

20 While the invention has been described by way of example and in terms of a preferred embodiment, it is to be understood that the invention is not limited thereto. To the contrary, it is intended to cover various modifications and similar arrangements and procedures, and the scope of the appended claims therefore should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements and procedures.

25

Brief Description of the Drawings

Figure 1 is a 3-D diagram showing the components of the invention ;

Figures 2A & 2B are the plans showing the components of the invention ;

30 Figures 3A & 3B show part of the components of the invention ;

Figure 4A is a diagram showing the condition of the invention ;

Figure 4B is another diagram showing the condition of the invention ; and

Figure 4C is a third diagram showing the condition of the invention .

Legend for the Drawings

5	Arc-shaped Rocking Frame	10
	Frontal support frame	20
	Positioning Region	201
	Rear support frame	30
10	Sliding sleeve	40
	Hinged Connection Region	401
	Front Hinged Connection Region	51
	Stoppage peg	511
	Rear Hinged Connection Region	52
15	Stoppage Rod	60
	Armrest	70
	Lock	80
	Controller	81
	Fastening Lock	82
20	Press Region	83
	Elastic element	84

CLAIMS:

1. A structure for an infant's rocker, comprising
 - an arc-shaped rocking frame for rocking purposes,
 - a frontal support frame connected through hinges to the front end of the arc-shaped rocking frame, the frontal support frame including a plurality of positioning regions,
 - a sliding sleeve that is movable but connected to the frontal support frame, including a lock that has a locking position and a released position, such that in the locking position, the lock will be locked in the positioning region and thus the sliding sleeve will be fixed on the frontal support frame, and in the released position, the lock will be freed from the positioning region and thus the sliding sleeve can be moved along the frontal support frame; and
 - a rear support frame with one of its ends connected through hinges to the rear end of the arc-shaped rocking frame, and its other end connected through hinges to the sliding sleeve;
 - the arrangement being such that the sliding sleeve moves the rear support frame so that the position of the rear support frame can be varied relative to the frontal support frame, and adjustments can be made in the angle of inclination of the frontal support frame, and also the frontal support frame and the rear support frame can be brought together for easy storage.
2. A structure for an infant's rocker of claim 1, wherein the arc-shaped rocking frame also comprises of a stoppage rod that is characterised by a storage position close to the arc-shaped rocking frame as well as a stoppage position whereby the stoppage rod sticks out against the floor and thus it prevents the arc-shaped rocking frame from rocking.
3. A structure for an infant's rocker of claim 1 or claim 2, wherein the arc-shaped rocking frame comprises of a frontal hinged connection region and a rear hinged

connection region separated by a distance, the frontal hinged connection region providing hinged connection for the frontal support frame, while the rear hinged connection region provides hinged connection for the rear support frame.

4. A structure for an infant's rocker of claim 3, wherein on the inner side the frontal hinged connection region is a stoppage peg that allows the stoppage rod to be fixed in the stoppage position.
5. A structure for an infant's rocker of any preceding claim, wherein the upper end of the frontal support frame is equipped with an armrest.
6. A structure for an infant's rocker of any preceding claim, wherein the frontal support frame is covered with a soft piece of knitted cloth for an infant to ride or sit on.
7. A structure for an infant's rocker of any preceding claim, wherein the positioning regions are the holes found on the wall of the frontal support frame.
8. A structure for an infant's rocker of any preceding claim, wherein the sliding sleeve comprises of a hinged connection region for the hinged connection for the rear support frame.
9. A structure for an infant's rocker of any preceding claim, wherein the lock comprises of a controller; the central part of the controller being connected through hinges to the sliding sleeve; on the one end of the controller there being a fastening lock, while on the other end is a press region and underneath the press region is an elastic element; such that, with the elastic element, the fastening lock is inserted into the locking position of the positioning region so that in the event that the press region is pressed with a force, the fastening lock will be moved to the released position.

10. A structure for an infant's rocker substantially as hereinbefore described with reference to Figures 1-4C of the accompanying drawings.

CLAIMS:

1. A structure for an infant's rocker, comprising
 - an arc-shaped rocking frame for rocking purposes,
 - a frontal support frame connected through hinges to the front end of the arc-shaped rocking frame, the frontal support frame including a plurality of positioning regions,
 - a sliding sleeve that is movable but connected to the frontal support frame, including a lock that has a locking position and a released position, such that in the locking position, the lock will be locked in a positioning region and thus the sliding sleeve will be fixed on the frontal support frame, and in the released position, the lock will be freed from the positioning region and thus the sliding sleeve can be moved along the frontal support frame; and
 - a rear support frame with one of its ends connected through hinges to the rear end of the arc-shaped rocking frame, and its other end connected through hinges to the sliding sleeve;

the arrangement being such that the sliding sleeve moves the rear support frame so that the position of the rear support frame can be varied relative to the frontal support frame, and adjustments can be made in the angle of inclination of the frontal support frame, and also the frontal support frame and the rear support frame can be brought together for easy storage.
2. A structure for an infant's rocker of claim 1, wherein the arc-shaped rocking frame also comprises of a stoppage rod that is characterised by a storage position close to the arc-shaped rocking frame as well as a stoppage position whereby the stoppage rod sticks out against the floor and thus it prevents the arc-shaped rocking frame from rocking.
3. A structure for an infant's rocker of claim 1 or claim 2, wherein the arc-shaped rocking frame comprises of a frontal hinged connection region and a rear hinged



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Claims searched: ALL

Examiner: R E Hardy
Date of search: 17 April 2002

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): A4B (L113)

Int Cl (Ed.7): A47D (9/00 9/02 13/10)

Other: Online: EPODOC, WPI, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage				Relevant to claims
A	DE3304443	A	HAHNER	: See the Figures	1
A	US6174028	B	YANG	: See the Figures	1
A	US5868459	A	WELSH	: See the Figures	1
A	US4807926	A	BRUNN	: See the Figures	1
A	US3556587	A	RYMES	: See the Figures	1
A	US2788056	A	PARKER	: See the Figures	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.